

CC: BOS  
PLANNING BOARD  
TOWN COUNSEL

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The Town Manager,  
Town Hall,  
Acton, Massachusetts.  
Attn: Don Johnson.

Dear Sir,

## Amateur Radio Tower Height

Please find attached copies of references to Federal Law PRB-1, which I presented to the Planning Board at their 22 February 2005 meeting. These references to the Federal Law clearly indicate all height restrictions of Amateur Radio Towers in a Town's Bylaws are illegal.

It is my opinion, and also the opinion of Acton's Amateur Radio community, that these data were the dominant facts that influenced the Planning Board in its (almost) unanimous decision to delete Amateur Radio Towers from the Town's "Structures" Bylaw.

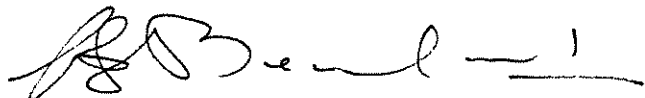
I believe there is general agreement that the few tall Amateur Radio towers in Acton do not cause any annoyance to the owner's neighbours; I have lived in Town for over 40 years and cannot remember any litigation on the subject. The headlines in *The Beacon*, during the last three weeks, tend to exaggerate the issue; this is an editor's prerogative.

In the *Summary* of the first draft of the revised Bylaw, a height restriction of 70 feet was proposed based on "commercially available radio towers" not on the technical requirements of radio communication. This figure was later amended to 80 feet; again without any technical input or perceived knowledge of the Federal Law.

Following the Public Hearing and the Board's debate on the issue the Planning Board, in their wisdom, voted to delete Amateur Radio Towers from the definition of "Structures" in the Bylaw.

I hope The Board of Selectmen and Town Counsel find the attached notes by Fred Hopengarten to be useful in their deliberations.

Yours truly,



C.J.Beanland, Amateur Radio Station AA1YE.

# Ham Radio Antennas: What Does the Law Require of Localities or Municipalities?

By  
Fred Hopengarten<sup>1</sup>

A series of materials instruct states, localities and municipalities (hereafter “localities”) as to what the law requires when a radio ham applies for an antenna permit. This challenge of localities is that they must meet each and every element of these requirements. This paper is designed to be helpful to localities in drafting an ordinance, by offering a series of questions, with the answer that is necessary for the ordinance to withstand a court challenge.

## FCC Materials

**PRB-1.** The full text of the FCC’s seminal 1985 Order, known as PRB-1, may be found at <http://wireless.fcc.gov/services/amateur/prb/index.html>. While characterized as a “Memorandum Opinion and Order”, it has the full force of a Federal regulation or statute, and may preempt state or local law. *Fidelity Federal Savings & Loan Ass’n v. de la Cuesta*, 458 U.S. 141 (1982).

Localities must take heed of several provisions of PRB-1:

24. . . . [T]here is . . . a strong federal interest in promoting amateur communications.

25. Because amateur station communications are only as effective as the antennas employed, antenna height restrictions directly affect the effectiveness of amateur communications. Some amateur antenna configurations require more substantial installations than others if they are to provide the amateur operator with the communications that he/she desires to engage in. . . . [L]ocal regulations which involve placement, screening, or height of antennas based on health, safety, or aesthetic considerations must be crafted to accommodate reasonably amateur communications, and to represent the minimum practicable regulation to accomplish the local authority’s legitimate purpose.

Thus, the locality must answer “yes” to each of the following questions:

- Is the ordinance crafted to reasonably accommodate amateur communications? [Note: If the ordinance was crafted to restrict antenna systems in ways that prevent or inhibit amateur communications, presenting unusual hurdles to amateur radio applications (such as setbacks or fees) where such hurdles are not present in similar accessory uses, the answer would be no.]
- Does the ordinance represent the minimum practicable regulation to accomplish the authority’s legitimate purpose? [Note: If the ordinance is not the minimum necessary, the answer would be no. The concept of the

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<sup>1</sup> Copyright 2004. Mr. Hopengarten is an attorney whose principal practice is antenna law. He has been a licensed radio amateur (K1VR) since 1956, and an attorney since 1972. He may be reached at [hopengarten@post.harvard.edu](mailto:hopengarten@post.harvard.edu) or through [www.antennazoning.com](http://www.antennazoning.com).

Excessive fees or costs, not reasonably related to the administrative cost of exercising a regulatory power, would fail this test.]

**47 CFR §97.15(b).** Subsequent to the issuance of the FCC's Order, the essence of PRB-1 was issued as a Federal regulation. The text of 47 CFR §97.15 may be found at: <http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=47&PART=97&SECTION=15&YEAR=1999&TYPE=TEXT>, but is short enough to be included here:

Sec. 97.15 Station antenna structures.

(a) Owners of certain antenna structures more than 60.96 meters (200 feet) above ground level at the site or located near or at a public use airport must notify the Federal Aviation Administration and register with the Commission as required by part 17 of this chapter.

(b) Except as otherwise provided herein, a station antenna structure may be erected at heights and dimensions sufficient to accommodate amateur service communications. (State and local regulation of a station antenna structure must not preclude amateur service communications. Rather, it must reasonably accommodate such communications and must constitute the minimum practicable regulation to accomplish the state or local authority's legitimate purpose. See PRB-1, 101 FCC 2d 952 (1985) for details.)

[64 FR 53242, Oct. 1, 1999]

Thus, the locality must answer "yes" to this additional question:

- Does the ordinance permit "heights and dimensions" sufficient to accommodate amateur service communications? [Note: Restrictions on height and dimensions are subject to this scrutiny.]

**DA 99-2569.** An additional FCC order was issued in 1999, stating the FCC position on two items which some localities and courts had found confusing. DA 99-2569 rejects balancing tests ("it is clear that a "balancing of interests" approach is not appropriate"). The local authority may not balance the interests of the community against those of the amateur, as the FCC has already done the balancing and issued a Federal rule.

The FCC further ordered that "the very least regulation necessary for the welfare of the community must be the aim of its regulations so that such regulations will not impinge on the needs of amateur operators to engage in amateur communications."

This Order may be found at  
<http://wireless.fcc.gov/services/amateur/prb/prb1999.html>

Thus, the locality must answer "no" to these questions:

- Does the ordinance permit a "balancing of interests" approach to the application for a permit?
- Does the ordinance "impinge on the needs of amateur operators to engage in amateur communications"?

## State Laws

The American Radio Relay League, the national association for amateur radio, watches the development of the law in the area of amateur radio antennas very closely. A list of state statutes which encourage amateur radio, and may be relevant to a particular jurisdiction, may be found at

<http://www.arrl.org/FandES/field/regulations/statutes.html>.

At least 20 states now have such legislation.

## **Court Decisions**

As with many statutes and rules, the Courts have been required to resolve controversies in which a locality acted badly. Here follows a discussion of those cases, detailing further requirements of the law of amateur radio antennas.

### **An Open Mind.**

When Andy Bodony sought to erect an 86' tall antenna system in a town with a maximum height of 25', the Court found that the town had not approached the application with an open mind. In that case, the town sought out advice from counsel in advance of a hearing on just what would be necessary to deny a permit. *Bodony v. Sands Point, NY*, 681 F. Supp. 1009 (E.D. NY 1987), [www.qsl.net/k3qk/bodony.html](http://www.qsl.net/k3qk/bodony.html). In what was effectively a substantive due process case, it may interest local government officials that the amateur was awarded \$60,000 in damages.

### **No Fixed or Unvarying Height Limit.**

The *Bodony* case, above, also stands for the proposition that an arbitrarily chosen height limitation, without the consideration of the applicant's need for height, is preempted. ("We base our ruling on PRB-1, in preempting the right of the Zoning Board to arbitrarily fix a limitation on the height of an antenna to 25 feet.")<sup>2</sup>

Similarly, *Izzo v. River Edge, NJ*, 843 F.2d 765 (3d Cir. 1988), upholds the preemptive effect of PRB-1 to a 35' height limitation: "The effectiveness of radio communication depends on the height of antennas." At p. 768. The Court awarded fees of \$10,000.

See also *Howard v. Burlingame, CA*, 937 F.2d 1376 (9th Cir. 1991), (a case in which the bylaw required special permit for heights over 25'): "[T]hose [ordinances] which establish absolute limitations on antenna height . . . are . . . facially inconsistent with PRB-1."

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<sup>2</sup> "One factor in determining the range and effectiveness of radio communication is the height of the antenna. Measurement from the ground tells us little. A 25 foot antenna in a valley surrounded by hills might be useless, while that equipment on a mountain top might give optimum results. An antenna rising above the obstacles that interfere with radio signals obviously gives a greater range and better reception than an antenna of a lesser height."

Furthermore, see *Brower v. Indian River County Code Enforcement Board, FL*, No. 91-0456 CA-25 (June 23, 1993), 1993 WL 228785 (Fla.Cir.Ct.). (This case involved an antenna support structure of 68.88 feet, plus antennas to total of 95.6 feet; 72.4 feet from neighbor's property line.) The ordinance had an absolute prohibition on towers over 70'. The ordinance was held facially void as an unvarying maximum height: "We agree with the *Evans* court's adoption of prior rulings in that case which concluded that flat prohibitions of this nature are not permitted, *Evans*, at 976." [Refers to *Evans I*, the Federal District Court case in *Evans v. Boulder, CO*, 994 F2d 755 (10th Cir. 1993)].

In *Pentel v. Mendota Heights, MN*, 13 F3d 1261 (8th Cir., 1994) <http://www.qsl.net/k3qk/pentel.html>, an absolute 25' height limit was preempted. In *Palmer v. Saratoga Springs, NY*, 180 F. Supp. 2d 379 (N.D.N.Y. 2001), <http://www.nysd.uscourts.gov/courtweb/pdf/D02NYNC/01-12259.pdf>, an absolute height limit of 20' was preempted. "[A]n unvarying height restriction on amateur radio antennas would be facially invalid in light of PRB-1." (Citing *Pentel* and *Evans*.)

In other words, if a variance is required to go over a certain height, the ordinance is pre-empted.

#### **Effective Communications and Reasonable Accommodation is Found in the Specifics of the Application, and from the Ham's Perspective.**

In *Marchand v. Town of Hudson, NH*, 788 A.2d 250 (N.H. 2001), <http://www.courts.state.nh.us/supreme/opinions/2001/march221.htm>, a case involving three antenna systems, each totaling 100' tall, in addition to ruling that balancing of interests is not appropriate, the Court held that: "[T]o 'reasonably accommodate' amateur radio communications . . . the ZBA may consider whether **the particular height and number of towers are necessary to accommodate the particular ham operator's communication objectives.** (Emphasis added.)

Similarly, in *Snook v. Missouri City, TX*, <http://users3.ev1.net/~osnook/34.pdf> (reproducing the slip opinion) (USDC, SDTX, 2003), the Court held:

"To conduct effective emergency communications, Snook must be able to achieve at least a 75 to 90 percent successful signal under the changing variables that impact emergency or other amateur radio communications." Slip Opinion at 5, ¶9.

"PRB-1 requires a site-specific, antenna-specific, array-specific, operations-specific, ordinance-specific, and city action-specific analysis. PRB-1 at p. 7." Slip Opinion at 35, ¶16.

#### **An Attempt to Negotiate a Satisfactory Compromise.**

Finally, localities should realize that saying no is never enough. *Howard v. Burlingame, CA* (*id.*), requires that the city "consider the application, make factual findings, and attempt to negotiate a satisfactory compromise with the applicant." At 1380.

Similarly, *Pentel* (*id.*) quotes with favor the Howard case, saying that reasonable

accommodation requires an attempt to negotiate a satisfactory compromise.

### **No Consideration of Radio Frequency Interference.**

The simplest restriction on a locality is that it cannot consider the potential of interference to home electronic equipment, public service communications, and so forth. The interference preemption cases are quite plain.

*Broyde v. Gotham Tower*, 13 F.3d 994, 997 (6th Cir. 1994), <http://pacer.ca6.uscourts.gov/cgi-bin/getopn.pl?OPINION=94a0007p.06> (FL. Affirmed dismissal of nuisance suit regarding interference with home electronic equipment because interference falls within the FCC's exclusive jurisdiction over radio transmission technical matters).

*Southwestern Bell Wireless Inc. v. Johnson County Board Of County Commissioners*, 199 F.3d 1185, 1193 (10th Cir. 1999), cert. denied, 2000 WL 343599 (2000), U.S. S. Ct. Dkt. No. 99-1575, 529 U.S. \_\_\_\_ (2000), <http://laws.findlaw.com/10th/983264.html> (KS. Allowing local zoning authorities to condition construction and use permits on any requirement to eliminate or remedy interference "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.")

*Freeman v. Burlington Broadcasters*, 204 F. 3d 311 (2d Cir. 2000), cert. denied, 531 U.S. 917 (2000) <http://www.tourolaw.edu/2ndCircuit/February00/97-9141.html> (VT. Found that "'given the FCC's pervasive regulation in this area', allowing local zoning authorities to condition construction and use permits on any requirement to eliminate or remedy RF interference to public service communications 'stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress'.")

*Palmer v. Saratoga Springs, NY*, 180 F. Supp. 2d 379 (N.D.N.Y. 2001), <http://www.nysd.uscourts.gov/courtweb/pdf/D02NYNC/01-12259.pdf>. A Planning Board request for information on interference is unreasonable on its face. (Slip opinion at 15).

For a review of the field, see "The Ghost in the Computer: Radio Frequency Interference and the Doctrine of Federal Preemption", Brock, Computer Law Review and Technology Journal (1999), pp. 17-36.

### **Summary**

Pity the drafters of a local ordinance. The task is not simple when the meaning of "reasonable accommodation" is not plain. Nonetheless, it can be done.

### **Questions to the Locality**

A locality must answer "yes" to each of the following questions:

- Is the ordinance crafted to reasonably accommodate amateur communications?
- Does the ordinance represent the minimum practicable regulation to accomplish the authority's legitimate purpose?
- Will the permit granting authority approach each application with an open mind?
- Will the permit granting authority consider the amateur's need for effective communications from the amateur's perspective, and work to reasonably accommodate effective communications?

The locality must answer “**no**” to these questions:

- Does the ordinance permit a “balancing of interests” approach to the application for a permit?
- Does the ordinance “impinge on the needs of amateur operators to engage in amateur communications”?
- Is there a fixed or unvarying height limit, after which the only possible way to get a permit is by variance?
- Has the permit granting authority considered radio frequency interference (RFI) or television interference (TVI)?